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ABSTRACT

This study compared self-ratings of speech intelligibility with measured speech intelligibility for 200 college students who were deaf or hard of hearing. Student responses to questions on a self-perception speech questionnaire were analyzed and compared with measured speech intelligibility estimates derived by a transcription procedure. The study found strong and significant relationships between: (1) measured speech intelligibility and students' perception of how well they are understood by hearing persons, and (2) measured speech intelligibility and students' willingness to communicate orally with hearing persons. Results are consistent with previous studies which used different speech intelligibility estimation proceedings. Results indicate that college-age students who are deaf and hard of hearing have clear and accurate perceptions of their speech production abilities, thus supporting the current efforts of greater involvement of students in decisions about their communication and skill development. (DB)

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Comparison of Self-Rated and Measured Speech Intelligibility Estimates

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SUMMARY

This study was designed to investigate the congruence of self-ratings of speech intelligibility with measured speech intelligibility estimates for college students who are deaf and hard of hearing. Information was obtained from 200 NTID student communication records selected at random from a pool of approximately 1000 available records. Student responses to two questions on a 10-item self-perception speech questionnaire were extracted for this study. Measured speech intelligibility estimates were derived by the transcription procedure currently used at NTID (Magner, 1972; Samar & Metz, 1988.)

Three separate contingency coefficients (Siegel, 1956) were computed to determine the relationships between (a) measured speech intelligibility and the students perception of how well s/he is understood by hearing persons; (b) measured speech intelligibility and the students willingness to communicate orally with hearing persons; and (c) the relationship between the responses to the two questions. All relationships were found to be strong and significant.

The results of this study are consistent with those of previously conducted research (Subtelny, 1982; McKee, Stinson, & Blake, 1984) which used different speech intelligibility estimation procedures (Johnson, 1976). These findings indicate that college age students who are deaf and hard of hearing have clear and accurate perceptions of their speech production abilities. Additionally, their perceptions of their overall speech intelligibility are highly related to their attitudes about using speech with hearing people. This supports current efforts to more directly involve students in decisions about their communication instruction and modality choice. At NTID, for example, a self-rating of speech intelligibility is now included in the Language Background Questionnaire (Hatfield, Caccamise & Siple, 1978) which is filled out by all incoming students.

Abstract

This study was designed to investigate the congruence of self-ratings of speech intelligibility with measured speech intelligibility estimates for college students who are deaf and hard of hearing. The findings indicate that these students have a clear and accurate perception of their speech production abilities and that this awareness is highly associated with their attitudes toward using speech with hearing people. These findings are discussed with respect to active student participation in decisions about speech assessment and skill development.

The findings of two independent investigations conducted in the 1980's suggest that deaf adults have realistic and accurate perceptions regarding their ability to communicate orally. Subtelny (1982) reported a significant correlation (r = .68) between young deaf adults' self-ratings of speech intelligibility and speech intelligibility derived from panels of trained judges. Similarly, McKee et al. reported a significant bivariate correlation (r = .66) between self-ratings and measured speech intelligibility.

Although the McKee et al. and Subtelny (1982) data *appear* to support the use of self-ratings for the purposes of speech production skill assessment, their best case estimates of relationship (i.e., r = .66 and r = .68) accounts for only 44% and 46% of the variance respectively in the measured speech intelligibility estimates. The relatively low correlations reported by McKee et al. and Subtelny may be related to the fact that they both independently employed the NTID Read Intelligibility Scale (Johnson, 1976) as their metric to assess speech intelligibility. A recent examination of the distribution of estimation error of this instrument revealed gross violations of measurement prediction within the midrange of the scale (Samar and Metz, 1988). These observed estimation errors would very likely reduce the magnitude of the correlation between self-rated and measured speech intelligibility. Importantly, based on the findings of Samar and Metz (1988) the NTID Read Intelligibility Scale (Johnson, 1976) was replaced by an intelligibility write-down procedure that has been shown to possess excellent construct validity and rater reliability.

The purpose of this study , therefore, was to examine the strength of the relationship between young adult deaf individuals' self-ratings of speech intelligibility and the write-down procedure currently used at NTID.

Method

Information regarding self-rated speech intelligibility and measured speech intelligiblity was obtained from 200 NTID student communication records selected at random from a pool of approximately 1000 students who were enrolled during the academic year of 1991-1992. A random selection procedure was employed that virtually assured that the population we used was a representative sample spanning several years of entry.

Two specific questions regarding self-perception of speech production skill were examined in this study. Both questions, and the respective responses, were extracted from a 10 item questionnaire that broadly addresses self-perceptions about communication attitudes and skills. The first question regarded the students' perception of how well s/he was understood when speaking aloud, whereas the second question addressed the students' attitudes about communicating orally with hearing people.

Measured speech intelligibility estimates, obtained from the students records, were derived by the transcription procedure developed by Magner (1972) that is currently employed at NTID. Details regarding the administration of such write-down procedures can be found in Samar and Metz (1988).

The statistical procedure employed to evaluate the above data was the contingency coefficient (C). This nonparametric statistic was chosen by virtue of the fact that we were comparing interval level data (percentage scores) with nominal level data (categorical question responses).

Three separate coefficients of contingency (C) were computed to determine the relationships between (a) measured speech intelligibility and the students perception of how well s/he is understood by hearing persons; (b) measured speech intelligibility and the students willingness to communicate orally with hearing persons ; and (c) the relationship between the responses to the two questions.

Results

The relationship between the students' self-ratings of speech intelligibility and measured speech intelligibility was strong and significant ($X^2 = 114.6$; $df = 16$; $C = .60$; $p < .001$). The relationship between the students' willingness to communicate orally with hearing people and measured speech intelligibility was also strong and significant ($X^2 = 80.7$; $df = 16$; $C = .54$; $p < .001$). And, the relationship between the two questions was, predictably, strong and significant ($X^2 = 115.8$; $df = 16$; $C = .61$; $p < .001$).

Conclusions

The findings of this study are consistent with those of Subtelny (1982) and McKee et al. (1984). The strong convergence of the present findings with previous research indicate that college age students who are deaf and hard of hearing have clear and accurate perceptions of their speech production abilities. Additionally, their perceptions of their overall speech intelligibility are highly related to their attitudes about using speech with hearing people. These findings support current efforts to more directly involve students in decisions about their communication. This poster session will make specific suggestions for the implementation of broadened student participation in speech assessment and skill development.

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